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(71) Applicant *(for all designated States except US)*: **FAST TECHNOLOGY GMBH** [DE/DE]; Otto-Hahn-Strasse 24, Gewerbegebiet Riemerling, D-85521 Ottobrunn (DE).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **MAY, Lutz, Axel** [DE/GB]; 3 The Grange, Newbury, Berkshire RG14 6RJ (GB).

(74) Agent: **BLUFF, John, William**; Lloyd Wise, Tregear & Co., Commonwealth House, 1-19 New Oxford Street, London WC1A 1LW (GB).

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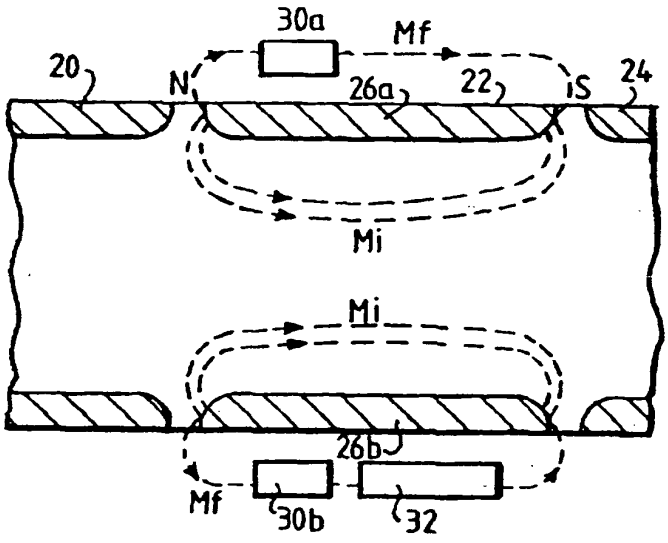
(54) Title: MAGNETISED TRANSDUCER ELEMENT FOR TORQUE OR FORCE SENSOR



(57) Abstract: A magnetic transducer element for use in sensing torque in a contactless transducer system for rotating shaft (10) comprises an annular region (22) of magnetisation induced in the shaft (10) by rotating it about its axis (A-A) with respect to a magnetising source (50) oriented to create longitudinal magnetisation (Mf) in the annular region. The source may be a U-shaped (horseshoe) magnet with its poles axially spaced and with the gap (g) between the poles substantially greater than the axial width (w) of the poles. The application of torque to the shaft skews the longitudinal magnetisation to generate a torque-dependent tangential circumferential field component (Ms). This tangential field component is sensed by an external sensor or sensors (30a, 30b) adjacent but not in contact with the annular transducer region (22). A pair of transducer regions can be employed as well as guard or keeper regions (20, 24) to enhance and stabilise the transducer region (22).

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